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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,636	09/24/2003	Keiko Morii	MAT-8466US	6835
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RATNERPRESTIA P.O. BOX 980 VALLEY FORGE, PA 19482			EXAMINER ARMSTRONG, ANGELA A	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/670,636

Applicant(s)

MORII ET AL.

Examiner

ANGELA A. ARMSTRONG

Art Unit

2626

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 5, 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to the remarks filed October 7, 2009, amending claims 1 and 8.

Currently, claims 1-15 are pending.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-4, 6-11, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emori et al (US Patent No. 6,934,681) in view of Chuang (US Patent No. 4, 941,178).

Emori discloses a speaker's voice recognition system, method and recording medium using two dimensional frequency expansion coefficients. Regarding claims 1 and 8, Emori discloses a method of speaker normalization comprising: segmenting (1) an input speech utterance into frames of a constant time length and extracting an acoustic feature parameter of each of the frames; for each of the frames, frequency-converting (3) the respective acoustic feature parameter; determining, for each frame, a plurality of similarities or distances between each of the frequency-converted feature parameters and a standard phonemic model; selecting at least one of the plurality of predetermined frequency conversion coefficients, representing a frequency converting condition for normalizing (2) the input utterance, by using the determined plurality of similarities or distances for each of the frames; and normalizing the input utterance by frequency-converting the input utterance using the selected at least one predetermined frequency conversion coefficient (col. 7, line 50 to col. 10, line 34). Emori does not specifically

teach frequency converting the feature parameters by filtering with a plurality of predetermined frequency conversion coefficients. Chuang (Abstract) discloses a system for speech recognition using preclassification and spectral normalization and teaches (col. 8, line 15 to col. 9, line 37) steps for compensating for frequency shifts due to variations in speech from different speakers. The system provides non-linear frequency transformation filter, yielding expansion and compression along the frequency axis, providing a representation of the speech signal with a coarse approximation of the non-linear property of the human auditory system and provides a non-linear frequency transfer function providing simplicity and flexibility for changing from compression to expansion via an all-pass filter (30). Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Emori to implement a non-linear frequency transformation filter, as taught by Chuang, for the purpose of providing expansion and compression along the frequency axis to compensate for frequency shifts in the speech signals from different speakers, as taught by Chuang.

Emori does not teach, but Chuang teaches a standard model is a group of phonemes, to allow the system to be able to recognize thousands of words using only a few prototype templates (col. 5, line 64 to col. 6, line 7). Therefore, it would have been obvious to modify the system of Emori to implement a standard model as a group of phonemes, as suggested by Chuang, so as to allow the system to be able to recognize thousands of words using only a few prototype templates and thereby make the system more efficient and minimize vocabulary storage requirements.

Regarding claims 2 and 9, the combination of Emori and Chuang discloses a step of selecting a predetermined frequency conversion coefficients includes a step of mutually

comparing between the plural similarities or distances included in an input frame constituted by the frame, a step of selecting for each frame a maximum likelihood, combination of a phoneme and a frequency conversion coefficient by using a result of comparison, and a step of cumulating the frequency of the frequency conversion coefficient in a maximum likelihood over plural frames and deciding a frequency conversion coefficients in highest frequency as a frequency converting condition (col. 7, line 50 to col. 10, line 34).

Regarding claims 3 and 10, the combination of Emori and Chuang discloses a step of selecting a frequency conversion coefficients has a step of mutually comparing between the plural similarities or distances included in an input frame constituted by the frame, a step of selecting a set of a phoneme of the standard phonemic model and a frequency conversion coefficient that provides a result of maximum likelihood, and a step of deciding the selected frequency conversion coefficient as a predetermined frequency coefficients of the frame (col. 7, line 50 to col. 10, line 34).

Regarding claims 4 and 11, the combination of Emori and Chuang discloses a step of computing a similarity or distance further includes a step of computing, for each frame, a ratio in similarity or distance of the phoneme as a weight by using the frame-based acoustic feature parameter of the frame and the standard phonemic model, the step of deciding a predetermined frequency conversion coefficients being a step to decide the predetermined frequency conversion coefficients by using the weight (col. 7, line 50 to col. 10, line 34).

Regarding claims 6 and 13, the combination of Emori and Chuang discloses the step of deciding predetermined frequency conversion coefficients employs at least vowels in comparing similarities or distances (col. 7, line 50 to col. 10, line 34).

Regarding claims 7 and 14, the combination of Emori and Chuang discloses the step of deciding predetermined frequency conversion coefficients employs only vowels in comparing similarities or distances (col. 7, line 50 to col. 10, line 34).

Regarding claim 15, Emori fails to specifically teach a frequency converting condition process display section for displaying, for a user, intermediate data obtained by an internal process of the frequency converting condition deciding section. However, displaying processing data to the user so as to provide the user with feedback information was well known in the art. It would have been obvious to one of ordinary skill to modify the system of Emori to display intermediate data obtained by the frequency converting section, so as to provide the user with feedback or confirmation information that the appropriate adjusts and modifications will be made to the acoustic features to ensure the recognizer has access to the most accurate parameters.

Allowable Subject Matter

3. Claims 5 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA A. ARMSTRONG whose telephone number is (571)272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Angela A Armstrong/
Primary Examiner, Art Unit 2626